

EXAMINER'S AMENDMENT

1. The application has been amended as follows:

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with applicant's attorney Mr. Vazken Alexanian on 07-17-2008.

Change the title of the invention to:

"Generating Watermark Signals".

Change the Abstract to:

A method for generating watermark signals to be embedded as a digital watermark in real-time contents wherein the method includes: inputting the real-time contents; storing the real-time contents; generating watermark signals corresponding to predicted intensities of the real-time contents from divided real-time contents; and storing the generated watermark signals to be outputted.

Amend claim 6 as follows:

A ~~watermark~~ watermark signal generating method for generating ~~watermark~~ watermark signals to be embedded as a digital watermark in real-time contents, the method comprising the steps of:

inputting the real-time contents;

storing the real-time contents;

generating, from the real-time contents, ~~watermark~~ watermark signals to be outputted corresponding to predicted intensities of the real-time contents; and

storing the generated ~~watermark~~ watermark signals to be outputted,

wherein the generation step includes the steps of:

predicting intensities of the ~~watermark~~ watermark signals from prediction of perceptual stimulation values of the real-time contents after a predetermined lapse of time;

controlling embedding by use of a message to be embedded as a digital watermark in the real-time contents; and

generating the ~~watermark~~ watermark signals to be outputted by use of outputs from the prediction step and outputs from the control step,

wherein the perceptual stimulation values represent sound or luminance, and the prediction step includes a step of generating a predicted inaudible amount or a predicted invisible amount of ~~watermark~~ watermark signals corresponding to intensities of the real-time contents after the predetermined lapse of time by use of data stored in the step of storing the real-time contents,

wherein the control step includes a step of generating a value to be embedded, which is a binary based on a positive and a negative, by use of a secret key, the message and a pseudo-random number, and further comprising a step of controlling outputs from the step of storing the generated ~~watermark~~ watermark signals to be outputted, by comparing the generated ~~watermark~~ watermark signals with the real-time contents after a time needed to embed the generated ~~watermark~~ watermark signals has passed,

wherein the input step includes a step of dividing the real-time contents, and the generation step includes a step of generating the ~~watermark~~ watermark signals by use of the divided real-time contents.

Allowable Subject Matter

2. Claim 6 is allowed.

The following is an examiner's statement of reasons for allowance:

The prior art lu et al. (US Patent No. 6,901,514 B1) of record discloses, a method for embedding a watermark into content. The method includes the steps of: receiving the content containing content sample, creating a continuous watermark sequence from the watermark, for each content sample in a first predetermined order: calculating a sample mean, calculating a sample variance, and normalizing the content. Further steps include generating a set of content coefficients from the content, generating a set of watermark coefficients from the watermark sequence, embedding the watermark in

the content by adjusting the amplitude of the watermark coefficients so that the distortion between the content coefficients and the associated watermark coefficients are minimized using a secret mapping function, and outputting the content.

The prior art Moskowitz (US Patent No. 6,205,249 B1) of record discloses, digital blocks in digital information to be protected are transformed into the frequency domain using a fast Fourier transform. A plurality of frequencies and associated amplitudes are identified for each of the transformed digital blocks and a subset of the identified amplitudes is selected for each of the digital blocks using a primary mask from a key. Message information is selected from a message using a transformation table generated with a convolution mask. The chosen message information is encoded into each of the transformed digital blocks by altering the selected amplitudes based on the selected message information.

The prior art Levy (WO 02/23905 A1) of record discloses, a method of embedding a digital watermark into a video signal using a time-based perceptual mask such that the digital watermark is substantially imperceptible in the video signal. A digital watermark embedder computes a time based perceptual mask comprising gain values corresponding to locations within a frame. The gain value for a location in the frame is changed as a function of the change in one or more pixel values at the location over time. The embedder uses the gain values of the time based perceptual mask to control embedding of corresponding elements of a digital watermark signal such that the

perceptibility of the elements of the digital watermark signal is reduced in time varying locations of the video signal.

However, prior arts taken singly or in combination, fail to anticipate or render the following limitation:

"wherein the perceptual stimulation values represent sound or luminance, and the prediction step includes a step of generating a predicted inaudible amount or a predicted invisible amount of watermark signals corresponding to intensities of the real-time contents after the predetermined lapse of time by use of data stored in the step of storing the real-time contents, wherein the control step includes a step of generating a value to be embedded, which is a binary based on a positive and a negative, by use of a secret key, the message and a pseudo-random number".

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ali Abyaneh whose telephone number is (571) 272-7961. The examiner can normally be reached on Monday-Friday from (8:00-5:00). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571) 272-3865. The fax phone

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numbers for the organization where this application or proceeding is assigned as (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Ali S Abyaneh/
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07-17-2008

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